



# UNITED STATES PATENT AND TRADEMARK OFFICE

H.A

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/508,786  | 09/23/2004  | Shiro Iida           | 82478-9000          | 3928             |
| 21611   | 7590        | 11/22/2006           | EXAMINER            |                  |
| SNELL & WILMER LLP<br>600 ANTON BOULEVARD<br>SUITE 1400<br>COSTA MESA, CA 92626 |             |                      | ROY, SIKHA          |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2879                |                  |

DATE MAILED: 11/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/508,786

Applicant(s)

IIDA ET AL.

Examiner

Sikha Roy

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>0904</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The Preliminary Amendment, filed on September 23, 2004 has been entered and acknowledged by the Examiner.

Cancellation of claim 7 and addition of new claims 8-18 have been entered.

#### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,3 - 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,633,128 to Ilyes et al. and further in view of U.S. Patent 5,882,237 to Sarver et al.

Regarding claim 1 Ilyes discloses (Fig. 1 column 3 lines 12-29, 62-67) an arc tube having a glass tube that is wound into a spiral wherein the glass tube has an inner shape of a substantially circular cross section with inner tube diameter of 8.8 mm (outer diameter - thickness).

Ilyes does not explicitly teach the cold spot temperature falling into a range of 60° C to 65°C.

Sarver in same field of endeavor discloses (column 1 lines 51-57) temperature controlled fluorescent lamps typically has cold spot temperature ranging from 40°C to 60°C.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to specify the compact fluorescent lamp of Ilyes having wall load adjusted such that the cold spot temperature is 60°C which is typically desirable cold spot temperature as disclosed by Sarver et al.

Regarding claim 3 Ilyes and Sarver disclose the claimed invention except for the limitation of wall loading of the lamp being in the range of 0.08 to .12 W/cm<sup>2</sup>. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the range for the wall loading of the lamp of Ilyes and Sarver being within 0.08 to .12 W/cm<sup>2</sup>, for proper control of the cold spot temperature since optimization of workable ranges is considered within the skill of the art.

Regarding claims 4 and 5 Ilyes discloses (abstract Fig. 1) the glass tube is in the shape of a double-spiral comprising a turning part 38, a first spiral part and a second spiral part, the turning part located in substantially a mid-section of the glass tube, the glass tube is in a shape of double-spiral comprising a turning part, the first spiral part starting from one end of the glass tube spiraling around a pivotal axis to reach the

Art Unit: 2879

turning part, the second spiral part starting from the turning part and spiraling around the pivotal axis to the other end of the glass tube.

Regarding claims 8,10-12 Ilyes discloses (column 4 lines 31-41) mercury is sealed within the glass tube for light excitation.

Regarding claims 13,15-17 Ilyes discloses the lamp including the arc tube is a low pressure mercury lamp.

Claim 19 essentially recites the limitations same as of claims 1, 3 and 13 and hence is rejected for the same reasons (see rejection of claims 1,3 and 13).

Claims 2, 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,633,128 to Ilyes et al., U.S. Patent 5,882,237 to Sarver et al. and further in view of JP 05151935 to Takahashi.

Regarding claim 2 Ilyes and Sarver disclose all the limitations same as of claim 1 but do not teach the glass tube that is wound in a spiral having an inner shape of a substantially elliptical cross section with an inner major axis in a range from 5mm to 9mm and inner tube minor axis of 3 mm or larger.

Takahashi in pertinent art of fluorescent lamp discloses (see Abstract) the lamp having glass tube having elliptical cross-section. Takahashi further teaches that tube having elliptical cross-section presents excellent strength and illumination efficiency.

Therefor it would have been obvious to one of ordinary skill in the art at the time of invention to modify the cross-section of the arc tube of Ilyes having elliptical cross-

Art Unit: 2879

section as suggested by Takahashi for providing excellent strength and illumination efficiency.

Regarding claim 2, Ilyes, Sarver and Takahashi disclose the claimed invention except for the limitation of the elliptical cross section with an inner major axis in a range from 5mm to 9mm and inner tube minor axis of 3mm or larger. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide elliptical cross section with an inner major axis in a range from 5mm to 9mm and inner tube minor axis of 3mm or larger, for maximum illumination efficiency since optimization of workable ranges is considered within the skill of the art.

Regarding claim 9 Ilyes discloses (column 4 lines 31-41) mercury is sealed within the glass tube for light excitation.

Regarding claim 14 Ilyes discloses the lamp including the arc tube is a low pressure mercury lamp.

Claims 6 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,633,128 to Ilyes et al., U.S. Patent 5,882,237 to Sarver et al. and further in view of U.S. Patent 6,437,502 to Nishio et al.

Regarding claim 6 Ilyes and Sarver are silent about the glass tube fitting into a cylindrical space of maximum diameter in a range of 30mm to 40 mm inclusive and maximum length in a range of 50mm to 100 mm inclusive.

Nishio in analogous art of compact fluorescent lamps disclose (Fig. 1 column 12 lines 14-38) a self ballasted compact fluorescent lamp typically having height H2 in the ranges from 50 to 60 mm and the maximum width (diameter) D3 ranging from 32 to 43 mm. Nishio further notes (column 5 lines 29-56) that a lamp with this specific dimension provides total luminous flux same as a lamp corresponding to those of a typical light bulb for general illumination such as an incandescent lamp having a rated power of 60W type.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to specify the typical dimension of a compact lamp with maximum diameter ranging from 32 to 43 mm and height ranging from 50 to 60 mm as disclosed by Nishio for the compact lamp of Ilyes and Sarver for providing total luminous flux same as a lamp corresponding to those of a typical light bulb for general illumination such as an incandescent lamp having a rated power of 60W type.

Regarding claim 18 Ilyes discloses the lamp including the arc tube is a low pressure mercury discharge lamp.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,744,205 to Iida et al. and U.S. Patent 6,759,797 to Tokes et al. disclose compact fluorescent lamp with double helix shaped arc tube.

Art Unit: 2879

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Sikha Roy*

Sikha Roy  
Patent Examiner  
Art Unit 2879